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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,083

10/28/2003

Chin Cha Chou

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7590

04/19/2006

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EXAMINER

YAO, SAMCHUAN CUA

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,083

Applicant(s)

CHOU ET AL.

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species B (claims 1-2 and 4) in the reply filed on 02-21-06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawing

2. Figures 1 and 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated in figure 1 and filter 16 in figure 9 is also old. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "Teflon" is a live tradename. A tradename by its nature does not have a fixed chemical composition. In other words, the chemical composition could change with time. In other words, tradename cannot be used properly to identify any particular material or product. For this reason, this renders claims 1-2 and 4 indefinite, because it is unclear what chemical composition or material is required in this claim. In light of Applicant's specification on page 1 full paragraph 1, TEFLON is assumed to be a polytetrafluoroethylene (PTFE). Additionally, it is unclear what is intended by "dual-direction extending Teflon film" (emphasis added). Does this limitation require the film to be a bi-axially stretched/oriented film? For the purpose of examining this limitation, this limitation is assumed to require the film to be bi-axially stretched/oriented. Equally important the process steps recited in claim 1 are difficult to comprehend. As best understood, the following process steps are required in the body of claim 1:

- splitting dual-direction extending (i.e. bi-axially stretched) PTFE film;
- inter-twisting the split PTFE film to form a yarn;
- knitting the yarn using a machine to form a PTFE fabric;
- subjecting the PTFE fabric through a raising treatment to form a fabric with raised fibers;
- applying one or two surfaces of the raised fabric with a dual-direction extending PTFE film to form a PTFE fabric/film laminate; and,
- heating the laminate to adhere the PTFE film and the raised fabric, thereby forming a non-woven filter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (US 4,168,298) in view of Sassa et al (US 5,096,473), Kobylivker et al (US 6,072,005), JP 61174913, and optionally further in view of Applicant's Admitted Prior Art (AAPA).

Fitzgerald (US 4,168,298) discloses a process of making a PTFE filter, the process includes forming ribbons of an oriented PTFE film; fibrillating the film into a yarn and twisting the yarn to form an enhance strength yarn; forming a woven fabric by knitting the yarn; wherein the fabric can be used for making a filter bag (title, abstract, col. 1 line 29 to col. 2 line 59; col. 3 lines 1-30). While Fitzgerald does not teach splitting an oriented film, one in the art would have readily recognized and appreciated that an effective alternative for making ribbons of PTFE is to simply form a large PTFE film and then to slice it into a plurality of PTFE ribbons. While it is unclear whether the oriented PTFE film is a uni-axially oriented or bi-axially oriented film, it would have been obvious in the art to use a bi-axially oriented a PTFE film, because bi-axially oriented film has improved film

strength in dual directions instead of simply being enhanced in a single axial direction. Moreover, uni-axially oriented film and a bi-axially oriented film is an art recognized alternative ways of making films depending on the desired end-use of a finished film.

Fitzgerald does not teach subjecting a finished woven/knitted web to a raising treatment. However, JP 61174913 A teaches the desirability of forming a filter cloth, where a knitted web is been subjected to a napping operation in order to form a piled surface on the web. (English abstracts). Accordingly, a finished filter cloth has a prolonged life and a higher permeability. It would have been obvious in the art to nap a knitted PTFE web of Fitzgerald in order to enhance its characteristics.

Fitzgerald also does not teach thermally bonding a bi-axially stretched film to a knitted PTFE web. However, Sassa et al discloses making a filtration fabric laminate with an *"improved filtering performance"*, the laminate being suitable for making a filter bag. The process includes providing a porous PTFE membrane; and thermally bonding the porous PTFE membrane to a coated woven web (col. 1 line 11 to col. 2 line 56). Sassa also teaches forming a porous PTFE membrane by uniaxially stretching a PTFE film (col. 3 lines 11-23). See for instance the teachings of Gore (US 4,87,390) cited by Sassa. While Sassa does not teach using a porous PTFE membrane which is bi-axially stretched. However, such would have been obvious in the art, because bi-axially stretching films is an art

recognized effective alternative to uniaxial stretching for making a microporous film as exemplified in the teachings of Kobylivker et al (col. 6 lines 27-39). It directly follows that, it would have been obvious in the art to laminate a bi-axially stretched porous PTFE film to a napped PTFE knitted fabric of Fitzgerald in order to improve the filtering performance of a finished filtering web. Moreover, one of the effective ways for bonding a film and a fabric together is to use an adhesive and then to thermally press them together as exemplified in the teachings Sassa. For this reason, it would have been obvious in the art to subject the bi-axially stretched porous PTFE film to a napped PTFE knitted fabric to a thermal pressing operation.

While not presently recited in the claims, it would have been obvious in the art to thermally laminate a porous PTFE film and a napped PTFE knitted fabric without using an adhesive, because this is an art recognized effective alternative way of bonding a fibrous web and a film as exemplified in the teachings of the APA (page 1 full paragraph 2).

The Admitted Prior Art (APA) discloses a conventional process for making a filter, providing a needled cotton fibrous web, and then heating a TEFLON and needled web to bond the layers together (page 1 full paragraph 2). Also see the teachings of Kobylivker et al (figure 5).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 6 as applied to claim 1 above, and further in

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view of Forsten (US 6,103,643) and one of Ruger et al (5,269,921) and Huning (US 5,803,939).

Forsten, drawn to forming a high performance cartridge filter, discloses using a filter medium comprises a thermally laminated fluoropolymer fiber fabric and fluoropolymer membrane for making the cartridge filter (col. 1 lines 42-45; col. 5 lines 31-33), and also discloses that it is known to form a filter bag from a laminate of spunlaced fabric and membrane (col. 23-34). It would have been obvious in the art to use the modified laminated filter media taught by Fitzgerald in making cartridge filters as such provide a more efficient means of filtration as disclosed by Forsten (col. 1 lines 8-15). Moreover, it would have been obvious in the art to roll the modified laminated filter media taught by Fitzgerald as such is an art recognized effective means for making a cartridge filter as exemplified in the teachings of either Ruger et al (abstract; figure 3) or Huning (abstract; figure 1).

Conclusion

Note: in a related applicant's application 10/695,082 on page 1 on a background of the invention, application '082 appears to suggest that the process recited in claim 1 in this application is conventional in the art. It would appear, however, the process steps disclosed on page 1 in a specification in application '082 are applicant's own invention. Clarification regarding this matter is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571)

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272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Richard Crispino can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
04-17-06